AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application. Please amend the claims as follows.

1-21. (Canceled)

22. (Currently Amended) A tuneable grating assisted directional optical coupler to couple a transmission signal, comprising:

a first waveguide comprising a first core and a first cladding, said first waveguide having a first effective refractive index;

a second waveguide comprising a second core and a second cladding, said second waveguide having a second effective refractive index, ~~(n_2),~~ different from said first effective index, ~~(n_1),~~ and being in substantially close proximity to said first waveguide in a predetermined region to provide coupling therebetween; and

a periodic perturbation positioned in said coupling region for causing said coupling to be wavelength selective for ~~one~~ a given wavelength ~~(λ_0)~~ as a function of said first ~~(n_1)~~ and/or said second ~~(n_2)~~ effective refractive index;

said second cladding of said second waveguide comprising a tuneable material and said first cladding of said first waveguide comprising a non-tuneable material.

23. (Currently Amended) The coupler according to claim 22, wherein said tuneable material has a refractive index ~~(n_3; n_7)~~ which can be varied upon variation of an external parameter.

24. (Currently Amended) The coupler according to claim 23, wherein the tuneable material is variable with temperature and said tuneable material has a ratio $|\frac{\Delta n}{n}|$ between the refractive index variation Δn ~~of the refractive index (n_3; n_7)~~ and the refractive index n ~~(n_3; n_7)~~ of said tuneable material, the ratio not smaller than 10^{-2} for a temperature variation not greater than 100°C.

25. (Currently Amended) The coupler according to claim 23, wherein the tuneable material is variable with an electric field and said tuneable material has a ratio $|\frac{\Delta n}{n}|$ between the refractive index variation Δn ~~of the refractive index (n_3; n_7)~~ and the refractive index n ~~(n_3; n_7)~~ of said tuneable material, the ratio not smaller than 10^{-2} for an electric field variation not greater than 1 V/μm.

26. (Currently Amended) The coupler according to claim 23, wherein the refractive index n ~~(n_3; n_7)~~ of said tuneable material is variable with temperature T and said tuneable material has a thermo-optic coefficient $\left|\frac{dn}{dT}\right|$ greater than or equal to 10^{-4}/°C.

27. (Previously Presented) The coupler according to claim 23, wherein said tuneable material variable with temperature is a polymer.

28. (Currently Amended) The coupler according to claim 23, wherein the refractive index ~~(n_3; n_7)~~ of said tuneable material is variable with electric field and said tuneable material has an electro-optic coefficient ~~($|r|$)~~ greater than or equal to 2.5 nm/V.

29. (Previously Presented) The coupler according to claim 22, wherein said first and said second waveguides are vertically stacked on a substrate.

30. (Previously Presented) The coupler according to claim 29, wherein said first waveguide is the lower waveguide, while said second waveguide is the upper waveguide.

31. (Previously Presented) The coupler according to claim 22, wherein said first and/or said second core comprises silicon compound material.

32. (Previously Presented) The coupler according to claim 22, wherein said first cladding of said first waveguide comprises silica glass.

33. (Currently Amended) The coupler according to claim 22, wherein said given wavelength ~~(λ_0)~~ is in the range of about 1530 nm to about 1565 nm.

34. (Previously Presented) The coupler according to claim 22, wherein said transmission signal carries a given number of optical channels having wavelengths comprising about 1530 to about 1565 nm.

35. (Currently Amended) The coupler according to claim 22, wherein said periodic perturbation is a Bragg grating having a grating period (Λ) and said given wavelength (λ_0) is given by $\lambda_0 = \Lambda(n_1 \pm n_2)$, where n_1 is said first effective refractive index and n_2 is said second effective refractive index.

36. (Currently Amended) The coupler according to claim 22, wherein said transmission signal is supplied to said first waveguide and a coupled signal of said given wavelength ~~(λ_0)~~ is outputted by said second waveguide.

37. (Previously Presented) The coupler according to claim 22, wherein said periodic perturbation is realised on the first waveguide.

38. (Previously Presented) The coupler according to claim 37, wherein said periodic perturbation is realised on said first core of said first waveguide.

39. (Currently Amended) The coupler according to claim 36, wherein said transmission signal and said coupled signal are contra-propagating and said given wavelength (λ_0) is given by $\lambda_0 = \Lambda(n_1 + n_2)$, where Λ is a grating period of said periodic

perturbation, n_1 is said first effective refractive index, and n_2 is said second effective refractive index.

40. (Currently Amended) The coupler according to claim 36, wherein said transmission signal and said coupled signal are co-propagating and said given wavelength (λ_0) is given by $\lambda_0 = \Lambda(n_1 - n_2)$, where Λ is a grating period of said periodic perturbation, n_1 is said first effective refractive index, and n_2 is said second effective refractive index.

41. (Currently Amended) The coupler according to claim 39, wherein said transmission signal comprises one or more wavelengths between a lower wavelength value λ_{min} and an upper wavelength value λ_{max}, and wherein said first effective refractive index n_1 and said second effective refractive index n_2 ~~indices (n_1, n_2)~~ satisfy the following equation:

$$n_2 - n_1 > 2n_1\left(\frac{\lambda_{max}}{\lambda_{min}} - 1\right).$$

42. (Currently Amended) An add/drop optical device comprising one or more ~~of the~~ tuneable grating assisted directional optical couplers, at least one of the tuneable grating assisted directional optical couplers comprising:

a first waveguide comprising a first core and a first cladding, said first waveguide having a first effective refractive index;

a second waveguide comprising a second core and a second cladding, said second waveguide having a second effective refractive index, different from said first effective index, and being in substantially close proximity to said first waveguide in a predetermined region to provide coupling therebetween; and

a periodic perturbation positioned in said coupling region for causing said coupling to be wavelength selective for a given wavelength as a function of said first and/or said second effective refractive index;

said second cladding of said second waveguide comprising a tuneable material and said first cladding of said first waveguide comprising a non-tuneable material.

~~according to any one of claims 22-41.~~